ABSTRACTS AUTHOR INDEX

Numbers refer to Abstract Numbers

Aalund, L. R., 233
Abel, W. I., 964
Abdul-Khalim, 669
Addison, G. E., 282, 899
Akopova, A. A., 1084
Alberta, T., 1164
Alexander, J. L., 52
Al-Hussainy, 752, 768
Aliev, S. M., 39
Aliev, V. S., 669
Alizade, Z. A., 221
Allam, M. I., 49
Allen, D. R., 965
Allen, J. W., 208
Allman, L. J., 62
Allum, K. G., 693
Altwicker, E. R., 47
Ambrose, D., 382
Amenomiya, Y., 365
Amos, R., 302
Anderson, A., 190
Anderson, A. R., 93
Anderson, F. W., 523
Anderson, K. H., 720
Anderson, R. O., 1175
Anderson, W. L., 744
Andreas, F., 710, 711
Andrews, D. E., 843
Angulo, J., 1062
Annis, M. R., 946
Archard, J. F., 694
Archer, D. L., 767, 1001
Arey, W. F., 294
Arkhipenko, M. G., 1092
Armstrong, W. H., 520
Arndt, U. W., 589
Asahara, T., 1067
Asakov, Ya. I., 184
Asseff, P. A., 100
Asselin, G. F., 279
Atkinson, C. H., 966
Attems, C., 486
Austin, C. F., 947
Austin, F. R. 109
Avasthi, S. M., 967
Axelrod, L., 1045
Ayling, A. B., 381
Aziz, K., 753

Baatz, E., 810
Babcock, R. E., 261
Babernics, L., 50
Baccaredda, M., 868
Bace, B. W., 925
Bagrii, E. I., 1085
Baiburskaya, E. L., 866
Bailey, C. A., 209
Bailey, W. A., 286
Baker, H. R., 524
Baker, R. W., 455
Bakshi, Yu. M., 1068
Baldwin, D. E., 754
Bailod, A. P., 400
Bamberger, E. N., 537
Banks, R. L., 1065
Baraldi, S., 431
Barb, D. K., 278
Barnes, W. J., 225
Barrow, T. D., 143
Barry, D. W., 640
Bartz, A. M., 1075
Batchelder, D. D., 1177
Batycky, J. P., 440
Bauer, W., 61
Bazant, V., 36, 666
Beatty, H. A., 538, 1135
Beaupre, C. J., 627
Becker, J., 800
Becker, L. E., 721
Beckey, H. D., 383
Beebe, B. W., 676
Begley, J. W., 38, 603
Beland, J., 731
Bell, D. L., 751
Belt, J. R., 597
Bel'tsov, B. A., 375
Bendix, H., 662
Bendler, E. P., 1016
Benelli, G. C., 246
Benesi, H. A., 297
Benjaminsen, J. M., 1166
Bennett, F. W., 413
Bennett, P. A., 526
Benyon, L. R., 432, 433
Berry, W. H., 500
Berthold, P. H., 671
Berti, V., 914
Berusch, A. I., 101, 210
Besse, C. P., 7
Best, J. V. F., 93
Beus, S. S., 824
Bieber, H. E., 695
Billon, A., 65
Binkelman, J. P., 227
Bisaro, R. E., 407
Bish, J. M., 211
Bishop, W. F., 610
Bixel, H. C., 15
Blagovidov, I. F., 1136
Blair, J. S., 168
Blakely, R. F., 5
Blazek, J. J., 455
Blow, C. M., 1176
Blum, P., 51
Blundell, D. J., 825
Boatman, W. A., 150, 948
Bobo, R., 627
Bodnaryuk, T. S., 397
Boehringer, R. H., 102
Bogdanov, N. F., 363
Bogdanova, O. K., 1069
Boice, E. G., 628
Bolster, R. N., 524
Bookout, D. E., 17
Booser, E. R., 103, 212
Booy, R. R., 688
Bortz, L. C., 618
Bostrom, R. C., 1
Boswell, J. L., 934
Botnikov, Ya. A., 182
Boulliioun, E. H., 925
Bousaid, I. S., 968
Bowman, L. O., 104
Boyarchuk, P. G., 862
Boyd, W. E., 845
Brandenstein, H., 696
Breitenbach, E. A., 741
Bresso, G., 1106
Briggs, J. E., 969
Bright, G. S., 1137
Brill, J. P., 755
Brinkmann, W., 311
Broadman, C. R., 756
Bromell, R. J., 629
Broughton, D. B., 279
Broussard, D. E., 640
Brown, G. W., 1076
Brown, J. E., 785
Brown, K. E., 755, 843
Brown, P. I., 907
Brown, R., 659
Brown, T. D., 1134
Browning, W. F., 1008
Brunato, S., 8
Bruneau, D. G., 1025
Bruning, K., 27
Bryant, D. L., 829
Buchele, W. F., 906
Buckham, J. A., 1051
Buckley, H., 1107
Buckley, W. L., 1167
Buckman, D., 267, 836
Buckner, L. R., 823
Budec, C., 349
Budnikov, P. P., 484
Buiter, P., 201
Bulkley, W. L., 1167
Bulychev, V. P., 230
Bunting, J. T., 1144
Bunting, K. R., 107
Bunz, P., 60
Burgmann, Fr., 696
Burgoyne, J. H., 52
Burke, J. A., 757
Burlingame, A. L., 553
Burnett, P., 758
Buschman, W. J., 1016
Butt, A. M., 722
Butula, I., 479
Byk, S. Sh., 872

Cady, G. V., 84
Cain, J. E., 742
Calia, P., 1083
Callow, C., 169, 170, 434
Calvin, M., 82
Cameron, A., 224, 314, 598, 1088
Campbell, J. B., 771
Campbell, J. M., 939
Campbell, M., 105
Campbell, M. E., 525
Campbell, W. E., 706
Carl, P. R., 1077
Carless, J. E., 464
Carlton, L. A., 984
Carpenter, B. N., 770
Carpenter, G. L., 1020
Carpenter, H. C., 941
Carr, D. S., 106
Carra, S., 40, 871
Carter, C. F., 215, 601, 1143
Carter, G., 742
Carter, L. G., 743
Carver, R. E., 723
Cassidy, M. M., 724
Cernicki, B., 887
Chalkley, D. E., 234
Chamberlain, C. T., 325
Chambers, F. T., 557
Chaney, P. E., 724
Chapiro, A., 401
Chaux, M., 478
Cheatham, J. B., 9
Chekhov, E. E., 1070
Chekmenev, V. G., 446
Chenier, J. H. B., 365
Chernakova, G. N., 508
Cherrington, D. C., 856
Chertkov, Ya. B., 596
Chieffo, A. B., 1046
Chierici, G. L., 153
Christian, J. B., 107
Chu, P. S. Y., 598
Cichowicz, L., 986
Ciucci, G. M., 153
Ciuffreda, A. R., 856, 1161
Clanton, G. W., 759
Claridge, E. L., 564
Clever, H. L., 467
Clinton, G. W., 970
Cloos, E., 725
Closman, P. J., 426
Coats, K. H., 427
Coberly, C. J., 971
Cocanower, R. D., 760
Cochran, N. P., 1156
Coe, A. V. R., 611
Colbeck, S. C., 157
Coleman, B. C., 327
Collins, L. J., 605
Collis, B. A., 92
Colyer, C. C. 62, 315
Comeaux, R. V., 408
Connor, H. J., 591
Constantinides, G., 908
Coogler, W. W., 863
Coona, R. L., 826
Corbett, P. F., 1108
Cordell, R. J., 727
Corn, M., 99
Coster, D. P., 213
Cotgrove, S., 335
Cotton, H. C., 1030
Covic, S., 1086
Cowan, J. C., 851
Cox, D. B., 526, 697
Cox, J. T., 757
Cox, R. W., 203
Craven-Walker, A., 160
Craig, F. F., 702
Crawford, H. R., 961
Crawford, P. B., 16, 154, 262, 768, 961, 972
Cropper, W. V., 376
Cross, T. S., 955
Crossman, J. R., 1031
Crowther, R. A., 589
Csicsery, S. M., 580
Culbertson, W. L., 641
Cullis, C. F., 1149
Cunningham, R. D., 761
Cunningham, W. C., 949
Curry, W. H., 1022
Curtis, M. R., 757
Cvetanovic, R. J., 365
Cziesso, E., 305

Dale, G. H., 322
Dalson, M. H., 874
Danaford, V. E. J., 1102
Dance, E. U. G., 306
Danielli, N., 472
Dauben, D. L., 973
Daumiller, G., 1064
Davey, F. J., 825
Davis, C. E., 903
Davis, J. A., 171
Davis, S. S., 1087
Davis, W. K., 247
Dayson, C., 214
Daze, R. E., 1045
de Frank, P., 950
de Jerphanion, A., 1119
de Lange, M. H., 1121
de Soete, G., 77
Deer, J. J., 1087
Delacour, J., 555
Demchenko, V. S., 910
Demeester, J., 1063
Dempsey, J. R., 980, 1174
Denham, J. B., 1030, 1032
Denison, R. E., 828
Devlikamov, V. V., 897
Dibelius, G., 55
Dickey, J. R., 125, 223
Dickie, J. P., 380
Dietrich, K. F., 268
Dimitrov, C., 379
Ditter, J. F., 108
Dixon, T. N., 969
Dobozi, O., 912
Dobrynina, T. P., 240
Docksey, P., 295, 1150
Dodge, J. S., 79
Doell, E. C., 1009
Doerr, T. C., 755
Dolbear, D. W. N., 545
Domke, C. J., 900
Donohue, D. A. T., 974
Doss, A. K., 612
Douglas, J. L., 336
Douma, J. H., 820
Dratwa, H., 78
Drazic, Z., 417
Dreher, J. L., 215
Dribbell, P., 435
Drizo, E. A., 402
Dromgold, L. D., 670
Dundy, M., 220
Dye, T. G., 512
Dyess, C. E., 879
Dysart, G. R., 633

Eakin, J. L., 975
Earlougher, R. C., 977, 991
Eastwood, S. C., 281
Eaton, B. A., 843
Ebersole, G. D., 698
Eckardt, H., 323
Eckert, E. R. G., 507, 855
Edge, R. M., 377
Edwards, C. M., 699, 700
Eells, R., 785
Eggers, D. F., 53
Eggleston, W. S., 772
Eidus, Ya. T., 374
Elias, D. W., 1014
Elliott, C. L., 758
Elliott, M. A., 1109
Ellis, E. G., 109, 110, 111, 112, 113 114, 115, 116, 141, 527, 528
El-Naggar, Z. R., 253
Ells, G. D., 1010
Elson, J. P. C., 1110
Emery, K. O., 147, 728
Emery, W. B., 501
Emmerson, J. D., 888
Engel, D., 384, 385
Evans, L. B., 579
Evans, W. M., 748
Ewbank, W. J., 513

Fairhurst, C., 18
Farley, F. F., 523
Farmer, H. H., 117
Farnand, J. R., 701
Farouk Ali, S. M., 155, 558, 559 635, 994
Farquar, G. B., 412
Farrar, G. L., 794
Fassbender, H., 33
Fatt, I., 20
Fein, R. S., 220
Feist, U., 889
Felsenthal, M., 560
Felton, H. R., 248, 890
Feray, D. E., 4
Ferrell, H. H., 560
Field, S., 874
Filippov, L. P., 465
Filla, M., 1039

Fincher, D. R., 344
Findlay, R. A., 898
Finneran, J. A., 1071
Firth, J. G., 466
Fitzgerald, B. M., 561
Fitzgerald, E. L., 729
Fitzsimmons, V. G., 529
Fleming, D. K., 940
Fogliano, L., 304
Fomina, V. I., 872
Foord, C. A., 1088
Foraboschi, P., 1035
Forbes, E. S., 693
Ford, J. F., 909, 1138
Foster, W. R., 428
Frankel, P. H., 416
Freeby, W. A., 1051
Freel, J., 869
Freidlin, L. Kh., 187, 1072
French, K. H. V., 468
Freund, M., 369
Frey, J. W., 99
Frohne, K.-H., 85, 86
Froning, H. R., 844
Frye, C. G., 42
Fuerst, H., 543
Fukuda, N., 885
Fuller, N. C., 1047
Fulton, P. F., 157, 575
Funderburk, J. C., 340
Funk, J. E., 424
Fursey, A., 512
Furtig, H., 69
Furuhama, S., 191
Futrell, J. H., 592

Gabor, J., 74
Gagliardi, J. C., 56
Gagnon, P. M., 1025
Gallaher, D. L., 344
Gallier, P. W., 876
Galtieri, A., 486
Galwey, A. K., 869
Garner, N. E., 745
Garrison, L. E., 740
Gaskell, T. F., 1108
Gaston, H. H., 625
Gautier, M., 1078
Gazzarrini, F., 418
Gebhart, J. C., 192
Geiger, G. H., 407
Gelbin, D., 48
George, C., 743
Gerhard, L. C., 144
Giaretti, F., 304
Gibhart, J. C., 1139
Gilarranz, S., 769
Gil-av, E., 472
Gilbert, J. B., 43, 287
Gilbert, R. J. H., 295
Gill, H. F., 841
Gimpel, F., 1078
Ginsburgh, I., 1167
Giordana, N., 461
Giorgini, M., 868
Glazunov, V. I., 193
Gleason, T. G., 354
Glenn, J. J., 17
Gnirk, P. F., 951
Goddin, C. S., 762
Godet, M., 672
Godfrey, D., 194
Godridge, A. M., 522
Gol'berg, Yu. E., 862
Goldberg, R. N., 663
Gonzalez, R. J., 935
Gordash, Yu. T., 1151
Gorin, Yu. A., 917
Gorislavetz, S. P., 181
Gorskii, V. G., 350
Gorzegno, W. P., 1111
Gracheva, T. S., 542
Graf, H. G., 773
Graham, J. R., 845
Graham, W. A., 601, 1143
Gram, A., 677
Graves, L. J., 825
Graves, R. W., 821
Gray, K. E., 425, 569, 570, 937, 963
Gray, R. S., 613
Gray, W. A., 325, 1112
Green, J. E., 651
Greenfield, W. D., 837
Gretener, P. E., 146, 952
Grew, W., 314
Grigorovich, B. A., 397
Groebe, K.-H., 710, 711
Groenewold, B. C., 1024
Gronegress, H. W., 801
Grosse-Wortmann, H., 1168
Grossman, A., 510
Grow, G. C., 1013
Grubjesic-Kovacic, D., 373
Guella, F., 40
Guerrero, E. T., 821
Guidroz, G. M., 978
Gundermann, E., 66
Gureev, A. A., 475, 596
Gussow, W. C., 827
Gustafsson, O. G., 530
Gutman, M. B., 180
Gutzeit, J., 409
Gwin, R., 436

Haensel, V., 282
Hagedorn, A. R., 755
Hager, W., 351
Hagist, F. C., 344
Hagiwara, Y., 642
Haimson, B., 18
Halbouty, M. T., 254
Halliday, G. W., 1176
Halling, J., 699, 700
Halliwell, H., 118
Hallworth, G. W., 464
Hamblin, R. J. J., 899
Hammann, W. C., 1088
Hammerich, T., 309
Hammett, D. A., 487
Hancock, R. A., 1113
Hancox, N. L., 562
Hanke, C. C., 678
Hanks, R. W. 437
Harbison, R. N., 6
Harker, J. H., 1114
Harker, J. T., 1115
Harper, J. C., 627
Harris, J. A., 521, 891
Harris, M. H., 746
Harris, W. L., 906
Harrison, N. L., 1148
Harrison, N. W., 976
Harsell, D. R., 119
Harvey, M. E., 386
Hasegawa, Y., 1105
Haskett, C. E., 763
Hassinger, R. C., 979
Hayes, D. J., 1089
Hedberg, H. D., 920
Hedden, K., 188
Hedelin, J. L., 41
Heinze, G., 518, 889
Heithaus, J. J., 805
Helion, R., 1063
Hellberg, H., 798
Heller, J. J., 175, 859
Hellman, H., 63
Henbest, R. G., 923
Henderson, J. H., 980
Henshaw, J. E., 514
Hepler, L. G., 663
Hersh, R. E., 670
Hershey, G., 826
Herve, P., 643
Herzog, R. E., 926
Heukelom, W., 419
Heymer, A., 185
Hibberd, W. A., 1157
Hickes, W. F., 245, 604, 927
Hijszeler, C., 1116
Hildebrand, G., 673
Hill, J. V., 338, 494, 1011
Hill, T., 190
Hilldrew, R. H., 652, 1040
Hillhouse, J. D., 1002
Hills, I. R., 884
Hinyard, P., 1021
Hiraoka, H., 718
Hirata, M., 1090
Hissong, D., 893
Hochfeld, G. E., 280
Hochweber, M., 922
Hodge, B., 881
Hoffman, M. L. J., 222
Hoffmann, H., 310
Hoggarth, M. L., 203
Holland, C. D., 278
Holland, H. B., 466
Holland, N. H., 690
Holman, G. E., 698
Holroyd, R. B., 438
Hood, B. F., 551
Hooks, R. M., 195
Hoover, B. O., 1047
Hopkin, E. A., 838
Hopkins, V., 105
Hopkinson, B. E., 1161
Hoppe, K., 662
Hoque, M. U., 726
Horn, J., 641
Horne, D. G., 298
Horth, A. C., 216
Hoshino, M., 1140
Hosie, R. M., 702
Houser, D. W., 903
Howard, A. D., 145
Howie, R. D., 494, 1011
Hubbert, M. K., 164
Hugh, K. E., 4
Hughes, J. R., 447, 928
Huitt, J. L., 764
Hull, R. J., 839
Hulsey, B. W., 10
Hunt, H. L., 1141
Hunt, K. C., 1049
Hunt, R. A., 944
Hunt, R. T., 1146
Hunter, D., 410
Hunter, J. S., 1172
Hurst, E. A., 880
Hutchinson, K., 636
Hutchinson, T. G., 1071
Huthnance, W. B., 341

Ibrahimpasic, I., 840
Ilardi, I. M., 914
Imnadze, N. V., 370
Ishiguro, T., 456
Ishihara, Y., 1162
Ismailov, R. G., 39
Ivanic, C., 349
Ivernel, A. B., 1117

Jacoby, R. H., 898
Jaegur, W. S., 158
Jaffe, S., 811
Jagaric, Z., 1150
Jeffries-Harris, M. J., 516
Jenik, A. J., 614
Jenkins, G. I., 303, 469, 1091
Jennings, A. R., 1012
Jennings, H. Y., 94
Jenson, O., 691
Job, B. E., 888
Johnson, A. W., 1016
Johnson, F. C., 257
Johnson, R. H., 526
Johnson, R. L., 217
Jones, D., 981
Jones, J. H., 56
Jones, J. R., 531
Jones, R. F., 568
Joos, L., 797
Juebermann, O., 660
Juentgen, H., 78
Jung, H., 28
Jungbluth, G., 328
Just, M. J., 1117

Kadmer, E. H., 64
Kalantar, N. G., 193
Kalechits, I. V., 183
Kalinin, A. I., 300
Kalse, H. D., 49
Kambeitz, H., 28
Kamen-Kaye, M., 2
Kao, J. T. F., 892
Karim, G. A., 206
Karlson, F. V., 247
Kartzmark, R., 43, 287
Kashirskii, V. G., 919
Katsobashvili, Ya. R., 542, 1158
Katz, D. L., 982
Kaufman, H. N., 532
Kaufmann, H., 46
Kay, T. D., 218
Kay, W. B., 893
Kayumov, R. P., 896
Kazanski, V. B., 37
Kearney, T. F., 689
Keeling, L. A., 563
Kehle, R. O., 261
Keil, G., 323
Keith, J., 811
Kelly, R. J., 873
Kennedy, H. T., 953, 967
Keppel, G. E., 1118
Kerley, J. G., 1077
Kharitonov, F. Ya., 484
Khurana, A. K., 574
Kilby, J. L., 929
Kim, D. S., 526, 697
King, H. F., 101, 210
King, P. W., 595
Kise, H., 1067
Kitchen, G. H., 120
Klaus, E. E., 219, 670, 695
Klein, K., 63
Klimovich, A. I., 473
Klomp, A. J. G., 419
Knezevic, E., 352, 420
Knopel, H., 713
Knöpp, H., 63
Knowles, C. R., 843
Knowles, K., 332
Knox, J. A., 1000
Kobayashi, R., 892
Kocakov, D., 936
Kocet, M., 353
Kochloefl, K., 36, 666
Koennecke, H.-G., 889
Kohlmeyer, T. F., 802
Kopita, R., 354
Koren, S., 488
Kornfeld, J. A., 342
Koroleva, A. V., 917
Kosbelev, V. S., 872
Kotel'nikov, B. P., 1092
Kotova, G. G., 387
Kowalski, B., 1096
Kozlov, L. M., 865
Krainer, K., 355
Krause, G., 660
Krech, W. W., 554
Kreidler, W. L., 1013
Krekeler, H., 1152
Kreutz, K. L., 220
Krieger, I. N., 79
Krisher, A. S., 1163
Krom, C. J., 470, 1093
Krone, H., 383
Kruglov, S. A., 446
Kucher, R. V., 238
Kuehne, G., 172
Kuenne, H., 662
Kuhn, R., 479
Kuklinskii, A. Ya., 515
Kuliev, A. M., 221
Kunkel, R. P., 1014
Kurashova, E. Kh., 1094
Kushnir, S. V., 473
Kuz'mina, N. A., 596
Kyle, D. H., 498, 1015

Lachance, T. P., 740
Lacoste, R. G., 477
Ladevich, R. M., 62
Ladner, W. R., 483
Lafay, M. R., 324
Lajoie, J., 731
Laligand, A., 1120
Lalor, W. F., 906
Land, C. S., 983
Langen, H., 81
Langman, C. A. J., 121
Langston, J. W., 747
Lanik, A., 317
Lanmon, C. P., 841
Lannert, J. W., 906
Lapidus, A. L., 374
Larkin, P., 716
Larsen, A. L., 842
Lasater, R. M., 1000
Latham, J. W., 615
Latimer, I. S., 1016
Lauckner, J., 543
Lavrovskii, K. P., 230
Lawhon, C. P., 748
Lawrance, P. A., 292
Lawson, S. D., 901
Layton, F., 1010
Le May, I., 222
Le Page, J. F., 288
Leach, R. O., 844
Leardini, T., 231
LeBlanc, N. F., 7
Ledyashova, G. E., 866
Lee, K. S., 564
Leehr, E., 356
Leidi, G., 486
Leiker, M., 311
Lenoir, J. M., 894
Leonard, R. R., 1122
Leont'eva, S. A., 196
Lerbekmo, J. F., 614
Leschner, O., 673
Lesperance, P. J., 731
Levasseur, J., 1078
Leveque, M., 1119
Lewis, A., 1132
Lewis, J. D., 857
Lichowska, K., 674
Lidiak, E. G., 828
Lieberman, N. P., 1048
Lilie, R. H., 806
Lindeman, M. A., 122
Linden, H. R., 1109
Link, H. H., 689
Linnenfelser, A., 73
Lipovich, V. G., 183
Lipovskaya, K. S., 398
Little, J. E., 953
Littmann, W. F., 599
Livingston, J. R., 1155
Lloyd, G. O., 512
Lobacheva, N. B., 919
Locke, C. D., 263
Lockwood, N. R., 1169
Logan, R. S., 1065
Lombard, D. B., 941
Loncarevic, M., 420
Lord, D. L., 10
Louis, M., 472
Louis, R., 895
Love, F. H., 644
Love, J. L., 930
Lovelace, D. E., 521, 891
Lowe, D. K., 764
Lowes, T. M., 1112
Lozovoi, Yu. A., 1142
Lubinski, A., 837
Lucchesi, A., 868
Ludlam, R., 378
Luikov, A. V., 357
Luneva, V. S., 1095
Lutoslawski, J., 606
Lytle, W. S., 1016

McBride, R. B., 1073
McCaleb, J. A., 616
McCarthy, E. D., 82
McCarthy, P. R., 123
McCarthy, W. C., 322
MacDonald, D. B., 256
McDonell, V. G., 195
McDuffie, J. C., 846
McFarlane, R. C., 850
McGrath, R. V., 1041
McGrew, A. R., 1017
McIninch, E., 664, 665
McKee, D. W., 44
McKinley, D. L., 1073
McKinley, R. M., 984
Maclean, I., 552
McLean, J. G., 333
McLean, R. H., 1046
McLennan, I. C., 985
Macleod, A. J., 533
McMaster, R. L., 740
McMillen, J. M., 428
MacNab, J. I., 668
MacRitchie, F., 299
McTaggart, N. G., 97
Magara, K., 954
Magnesium Industry Council, 534
Maher, P. K., 455
Mahley, H. S., 1170
Makins, R. L., 1018
Maksimov, S. I., 517
Mallatt, R. C., 371
Mallett, J. F. W., 589
Malone, B. W., 117
Malyavinskii, L. V., 475
Manley, H. W., 881
Manning, R. E., 526, 697
Manos, C., 3
Manton, S. M., 224
Marani, A., 1034
Markov, M. A., 493
Markovets, L., 1153
Marquis, G. L., 765
Marsden, K. E., 535
Marsden, S. S., 489
Marshall, H. T., 678
Martin, B. D., 147
Martin, J. S., 1019
Martin, W. L., 1006
Martinez, S. J., 821
Marx, E., 29
Massagutov, R. M., 289
Massara, A., 914
Masters, C. D., 617
Masterson, E. C., 80
Matsumoto, H., 1066
Mattheiss, P. K., 882
Matthews, E. J., 906
Mauss, F., 714
May, R., 268
Mayeax, M., 906
Mekhtiev, S. D., 235
Melton, F. A., 732
Melton, L. L., 10
Melton, N. M., 955
Mencher, S. K., 276
Menin, G., 461
Menon, P. G., 864
Menzie, D. E., 973
Mertwoy, A., 124
Messina, J., 124, 316
Metcalf, J., 774
Michaels, A. S., 296
Mikhailov, I. A., 915
Milhous, H. C., 1020
Miller, E. C., 1122
Miller, F. G., 977
Miller, G. K., 770
Miller, J. S., 975
Miller, R., 436
Miller, R. T., 679
Millheim, K. K., 986
Millis, C. W., 765
Mills, R. A., 4
Minachev, Kh. M., 184
Minibaev, A. V., 542
Mirskii, Ya. V., 388
Mitsche, R. T., 899
Moore, C. F., 501
Moore, J. F., 901
Moore, P. L., 630
Moore, W. W., 343
Moppett, D. J., 1113
Mora, M., 898
Morita, Y., 1066
Morris, A. L., 536
Morris, B. P., 760
Morrison, J., 236, 237, 439, 462, 775 776, 793, 812, 813, 814
Morrow, E. H., 1021
Morse, J. V., 766
Morton, A. S., 301
Mosby, J. F., 42
Mosier, B., 412
Mozzi, G., 476
Mrha, J., 921
Mtynek, B., 847
Muehlberger, W. R., 828
Mueller, E., 280, 307
Mueller, T. D., 850, 977
Mueller, W. H., 1049
Munro, H. P., 249
Murphy, C. K., 526
Murphy, C. M., 529
Murphy, W. C., 956
Murray, D. K., 618
Murray, G. H., 619
Musaev, M. R., 235
Musselman, J. A., 951
Mustav, Y. A., 565
Mutter, F., 649, 650
Myers, G. M., 957
Myers, H. M., 424
Myrtetus, G. B., 924

Naeve, K. L., 680
Nager, M., 286
Nair, K. D., 222
Náter, P., 1104
Naughton, D. A., 931
Nelson, A. D., 980
Nelson, C. C., 971
Nelson, R. C., 523
Nelson, R. G., 761
Nelson, R. W., 566
Nencetti, G. F., 868
Nesmeyanova, T. S., 388
Neuman, S. P., 738
Newman, H. H., 1050
Newton, C. L., 583
Newton, W. L., 416
Nicksic, S. W., 516
Nielsen, R. F., 575, 1173
Niepenberg, H. P., 60, 803
Niesman, T. W., 419
Nikolaevskii, A. N., 238
Niles, H. T., 900
Norling, D. L., 1016
Norrish, R. G. W., 298
Norton, J. H., 125, 223
Norwood, E. E., 1022
Noscow, E., 1020
Novak, F. I., 404
Nunn, R. C., 1177
Nuzzi, M., 914

Oborn, R. W., 1033
Odeh, A. S., 428, 567
Odintsov, O. K., 361
O'Donnell, J. F., 1059
O'Donoghue, J. P., 224
Oefelein, F. H., 992
Ogale, V. A., 902
Ogren, D. E., 733
Ogura, T., 600
Ohki, S., 885
Ohtsuka, T., 1105
Okabe, H., 1097
Oles, K. F., 626
Olsen, H. N., 932
Olson, C. E., 1022
Orbach, J. L., 1123
Oreskovic, B., 1098
Orkiszewski, J., 848
Orochko, D. I., 508
Orszagh, A., 1096
Orte, S., 126
Osborn, C. W., 269
Ostapenko, E. G., 239
Oster, G., 667
Ostrofsky, B., 1171
Ott, F., 766
Overal, J., 547
Owens, R. S., 225
Owens, W. W., 767

Pace, F. A., 964
Padovini, C., 486
Pahlitzsch, G., 807
Paine, W. R., 734
Paleni, A., 372
Pallister, A. E., 140
Panchenkov, G. M., 581
Panos, P. S., 503, 504
Paratella, A., 987, 1034
Parc, G., 65
Parker, J. M., 620
Parker, P. N., 749
Parker, R. J., 537
Pasimi, J., 19
Pass, F., 317
Patalakh, L. S., 367
Patchett, J. G., 988
Paterson, N. J., 283
Patrikeev, V. V., 875
Pattenden, W. C., 216
Patterson, G. K., 30
Patton, J. B., 721
Patton, L. D., 989
Payne, W. R., 1012
Pearce, A. F., 526, 703
Pearce, M., 1124
Pennella, F., 38
Peret, J. W., 990
Pereverzev, A. N., 363
Perez, J. M., 219
Perilstein, W. L., 538
Perkins, T. K., 554
Perry, R. O., 156
Perry, S. G., 1082
Pester, J., 415
Peter, G., 6
Peters, W., 78
Petrescu, C., 519
Petrie, J. C., 1051
Petroleum Information Bureau (Australia), 429
Petrovic, K., 1079
Petry, T. A., 318
Pfingst, H., 319
Pichot, P., 777
Pierot, M., 681
Pike, J. L., 556
Pilloy, H., 645
Pizzi, G., 153
Pliev, T. N., 197
Pollitzer, E. L., 899
Polyakova, A. A., 198, 389
Pomeyrol, R., 735
Pool, E. B., 925
Popov, V. V., 180
Popova, Z., 379
Porter, J. E., 1114
Porter, J. L., 1023
Porterfield, J. G., 1177
Potter, P. E., 5
Powers, L. W., 771
Pozdnyak, N. A., 240
Prats, M., 568
Pratt, D. R., 437
Preston, F. W., 1174
Preuss, A. F., 526, 704
Price, R. C., 1082
Primavesi, G. R., 97
Pritchard, E., 483
Prohaska, B., 373, 392, 420
Prokop, C. L., 261
Prugh, R. W., 329
Przybylski, Z., 674
Pugh, T. D., 151
Pushkina, R. A., 515
Puzitskii, K. V., 393

Quiney, R. G., 199

Rabinowicz, E., 226
Radbone, A. D., 270
Radinger, W., 1128
Radtke, H. H., 526, 704
Raetzsch, M., 471
Ragaini, V., 40, 871
Ralph, R. G., 971
Ramey, H. J., 752, 768, 968, 977, 991, 995
Rather, J. B., 901
Rathmell, J. J., 849
Ratliff, N. W., 426
Rausch, R. W., 988
Rawlings, A. A., 292
Raza, S. H., 489, 1001
Rea, D. K., 829
Reay, D., 203
Reddings, R. J., 75
Reduto, E. P., 873
Reed, R. D., 860
Reese, D. L., 1014
Reeves, E. A., 1052
Regan, L. M., 257
Reifschneider, D. E., 1177
Rein, S. W., 127, 1099
Reis, T., 937
Reiser, K., 140
Rendle, L. K., 60
Rennick, G. E., 19
Rerolle, E., 1125
Respess, C., 633
Reynolds, E. S., 128
Reznik, A. A., 157
Richard, L. L., 645
Richards, H. G., 830, 1013, 1016
Richards, J. F., 932
Richardson, J. T., 509
Richter, H. P., 807
Riddle, H. L., 1024
Ries, H. E., 74
Rike, J. L., 750
Risdon, T. J., 227
Ritchie, J., 1134
Rittenhouse, G., 942
Ritter, J. E., 634
Ritter, R. A., 440
Roberts, A. F., 52
Robertson, A. G., 57
Robertson, J. O., 992
Robins, D. A., 129
Robinson, L. H., 11
Robson, M., 512
Rodriguez, J. M., 30
Roehl, P. O., 621
Roellgen, F. W., 383
Roessler, H., 45
Rogers, A., 206
Rogers, J. A., 705
Roman, J. T., 601
Romans, J. B., 529
Ronan, J. T., 1143
Rooney, A. W., 692
Rosales, C. P., 993
Roscin, J. N., 363
Rosenberg, R. C., 706
Rossner, H., 801
Rotteri, S., 908
Rounds, F. G., 602
Rowe, C. N., 228
Rowe, G. W., 705
Rowson, H. M., 35
Rozenberg, N. A., 917
Ruch, S., 188
Ruda, J., 186
Rudd, E. A., 717
Ruhbrauck, H., 130
Ruhl, H. D., 1075
Ruiz, J., 970
Rumyantsev, A. N., 230
Ruska, W., 892
Rustamov, M. I., 669
Ryan, J. M., 1059
Ryan, R., 758, 1033
Ryazantzev, H. J., 910
Rzaev, N. K., 39

Sackmann, W., 448
Sage, B. L., 548
Sakurai, T., 1097
Salas, G. P., 736
Saleh, M. A., 496
Salmonowicz, K., 847
Salvigni, S., 1035, 1036
Samuel, D. M., 712
Sandrea, R., 264
Sandsted, G., 95
Sansone, L., 1039
Santamaria, F. J., 449
Saraf, D. N., 20
Sargent, L. B., 199, 1144
Sargent, R. W. H., 34
Sateva, M., 1086, 1098
Saunders, R. J., 1037
Savill, N. G., 54
Sayles, F. S., 200
Scarborough, R. M., 84
Schaller, H. E., 17
Schenk, P., 786
Schetelich, A. A., 119
Schey, J. A., 131
Schilling, A., 65
Schirmer, W., 510
Schleh, E. E., 831
Schley, J. R., 413
Schmidt, R. L., 467
Schmidt, T., 308, 803
Schitz, H., 1152
Schneider, K. W., 71
Schoeppel, R. J., 769
Schollhammer, F. R., 502
Schon, G., 646
Schuh, F. J., 958
Schrakamp, J. W. A., 702
Schurman, G. A., 751
Schwendinger, R. B., 943
Schwerdtel, W., 1154
Scott, C. G., 97
Scott, J. W., 283
Seemann, W. P., 798
Seidel, G., 46
Sekovanic, R., 1159
Seler, Z., 420
Selim, M. A., 87
Semkin, V. I., 1084
Serafimov, L. A., 862
Serag-el-Din, S. G., 406
Serov, V. A., 197
Seth, M. S., 569, 570
Sewell, G. M., 880
Shaburov, M. A., 364, 1060
Sharf, V. Z., 390
Shekhter, Yu. N., 414
Shelton, J. W., 737, 832
Sherman, P., 886
Shibagaki, M., 1097
Shmidt, F. K., 183
Shuikin, N. I., 239, 240
Shyrock, S. H., 742
Sidenius, G., 883
Silberberg, I. H., 843
Simoneit, B. R., 553
Simpson, J. P., 748
Simpson, P. B., 1126
Sindija, I., 959
Sinfelt, J. H., 285
Singleterry, C. R., 529
Sirola, J., 392
Siryuk, A. G., 201
Skinner, J. H., 1021
Sklyar, V. T., 197
Skoblo, A. I., 446

Skrove, J., 756
Slater, G. E., 994
Slingerland, R. E., 1024
Sloat, T. K., 68
Slocum, R. C., 1022
Smart, M. J., 573, 574
Smith, C. L., 634
Smith, D. J., 158
Smith, D. K., 949, 956
Smith, E. A., 132
Smith, F. M., 88
Smith, G. W., 884
Smith, J. M., 1053
Smith, L. R., 571
Smith, M. F., 526, 707
Smith, N. J., 148
Smith, P. B., 647
Smith, W. M., 284
Smits, L. J. M., 960, 962
Snelson, F., 97
Snodgrass, J. M., 1080
Snyder, K. L., 584
Snyder, R. W., 995
Society of Automotive Engineers, 904, 1145
Sokolova, V. I., 896
Solomatin, G. G., 572
Somerton, W. H., 23
Sommer, H., 797
Sparlin, D. D., 89
Speaker, W. H., 98, 648
Spektor, G. S., 182
Spicer, H. J., 1038
Spiro, J. G., 591
Spitlet, E. E., 903
Spiva, F. J., 612
Spragins, F. K., 997
Sproule, L. W., 43, 216
Sprouse, T. R., 999
Srinivasan, R., 718
Staber, G. I., 1156
Stahl, C. D., 21, 998
Stallings, E. W., 159
Stallings, L., 1100
Stambaugh, R. L., 526, 704
Stamm, H., 69
Stanfill, I. E., 682
Stapp, R. W., 622
Stark, V., 1127
Starratt, F. E., 1025
Stepanov, V. P., 517
Sterel, J., 649
Stern, G. R., 522
Sterrett, E. L., 501
Stevens, N. J., 1155
Stevenson, D. G., 190
Stift, K., 1128
Stockman, F. D., 1174
Stone, D. S., 623
Stormont, D. H., 593
Stover, D. D., 599
Strassner, J. E., 996
Streenath, A. V., 1101
Street, P. J., 1102
Stringer, L. S., 133, 539
Strugnell, W. A. C., 1178
Struth, H. J., 165
Suda, S., 1090
Sultanov, V. T., 235
Summers, F. C., 1026
Sutherland, A., 306
Sverchinski, B. S., 180
Swan, T., 588
Swann, D. J., 1020
Swanson, C. L. W., 1160
Swearingen, J. S., 683
Sweeney, N. J., 1071
Swenson, R. E., 624
Swolfs, H. C., 4
Symonds, E., 684
Szargan, P., 713
Szatajko, U., 867
Szpunar, J., 339

Tabor, D., 134, 394
Tade, M. D., 778
Takanari, N., 1105
Takashi Ogura, 600
Takens, W., 649, 650
Talisman, L. V., 364, 1060
Tanner, D. W., 450
Tarina, D., 519
Tartelli, R., 868
Taverna, M., 877
Tayyabkhan, M. T., 873
Taylor, W. F., 366
Teh Fu Yen, 380
Tek, M. R., 762, 982
Telesmanic, M. J., 933
ten Bosch, J. J., 590
Tenney, E. D., 358
Terboth, J. A. 72
Terumori, Ueda, 600
Tetenyi, P., 50
Tewksbury, E. J, 695
Theile, Fr., 685
Thiery, J., 555
Thomas, L. K., 982
Thomas, W. M., 938
Thompson, J. L., 22
Thompson, V. J., 906
Thorand, H., 543
Thornton, D. E., 625
Thornton, H. R., 135
Thygeson, J. R., 409
Tibbits, T. J., 999
Ticac, G., 385
Timm, B., 485
Timmins, R. S., 1059
Tinch, D. H., 770
Tinsley, J. M., 1000
Titova, L. F., 232
Tkac, A., 870
Todd, G., 271
Tolliver, J. D., 858
Tom, T. B., 944
Tompkins, H. F., 117
Torney, F. L., 51
Tragesser, A. F., 961
Travis, M. M., 342
Travis, R. B., 730
Treiber, L. E., 1001
Triems, K., 518
Trincanato, L., 987
Trites, R. T., 102, 229
Truitt, N. E., 568
Trzesicka, M., 1056
Tucker, D. R., 833
Tulupova, E. D., 239
Tung, S. E., 664, 665
Turkevich, J., 37
Turner, W., 234

Ueda, T., 600
Ugarkovic, N., 392
Uhde, A., 651
Upp, E. L., 511
Usov, Yu. N., 189
Ustick, R. E., 1002

Valerio, C., 431
Valleroy, V. V., 771
van Dam, J., 430
van Dam van Isselt, J., 686
van den Berg, J., 1020
van Dijk, C., 1003
van Dyke, L. H., 1027
van Houten, F. B., 730
van Loosen, J., 1054
van Poollen, H. K., 15
van Tyne, A. M., 1013
van Wiechen, P. H., 1166
Varshavskii, D. S., 193
Vasil'eva, I. I., 581
Vela, S., 984
Venkatesh, S., 1101
Versic, N., 349
Versino, C., 304
Villalobos, R., 585
Vineall, G. J. C., 136
Visna Meze, 411
Vlugter, J. C., 49
Voegtle, G., 311
Voelker, H. J., 323
Vogel, J. V., 1004
Vold, M. D., 121
Vold, R. D., 121
Volk, R. W., 1028
Vol'pert, V. I., 865
Volpicelli, G., 1039, 1083
Volynkin, N. I., 878
von Gonten, W. D., 14
von Rosenberg, D. U., 979
Voznezenskaya, E. V., 399

Waddams, A. J., 405
Waggoner, H. F., 743
Wagiel, E., 339
Wagle, B. V., 347
Wagner, K., 359
Wahl, W. W., 749
Wahlstrom, J. E., 850
Walker, C. T., 834
Walker, E. A., 822
Wall, C. G., 160, 573, 574
Wall, W. F., 54
Walsh, R. P., 1091
Walter, G., 95
Walters, W. J., 549
Walther, H. C., 1005
Walzer, P., 55
Warburton, B., 1087
Ward, D. C., 966
Ward, D. E., 637
Ward, D. R., 173
Ward, J. A., 652, 1040
Wardale, J. R. S., 271
Warren, J. H., 1170
Warren, J. P., 770
Wastie, A. E., 1127
Watkins, C. H., 290, 1074
Waxman, M. H., 962
Wear, K. B., 586
Weaver, E. W., 999
Weaver, K. N., 1016
Webb, G., 668
Webber, J. H., 255
Weekman, V. W., 873
Weeks, L. A., 6
Wehner, K., 46
Weineck, H., 803
Weintritt, D. J., 851
Weissmann, E., 519
Wells, J. S., 720
Wells, P. B., 368
Wenske, R., 45
West, G. H., 137
Whalley, L. C., 1076
Wharton, R., 1012
White, J. H., 906
White, P. J., 1061
Whitehead, E. V., 884
Whiteman, J., 258
Whiting, R. L., 14
Wichmann, P. A., 765
Wickham, H. P., 1045
Widner, R. L., 599
Wiegandt, H. F., 324
Wiener, P., 67
Wiese, J., 293
Wilde, E., 48
Wilderotter, W. M., 799
Wilhelmi, B., 23
Wilkes, J. O., 762
Wilkinson, W. D., 626
Will, K., 311
Willhite, G. P., 1006
Williams, A., 1112
Williamson, J. B. P., 1146
Willingham, R. W., 616
Willis, R. F., 394
Willman, B. T., 771
Wilski, H., 244
Wilson, G. R., 368
Wilson, H. I., 900
Wilson, J. H., 1006
Wilson, R. T., 603
Wilson, T., 1029
Winkler, O., 1081
Winney, P. E., 1103
Wirth, M. M., 97
Witherspoon, P. A., 738
Wolanski, Z. R., 135
Wolf, F., 81
Wolfe, J. O., 599
Wolff, F., 799
Wollhofen, G., 808
Wood, C. E., 362
Woodhall, R. J., 161
Woollard, G. P., 826
Wright, W. A., 526, 540
Wurzbacher, G., 95

Yakushkin, M. I., 911
Yamato, M., 1074
Yang, J. H., 425
Yang, N.-L., 667
Yantovskii, S. A., 58
Yarborough, L., 571
Yates, D. J. C., 285
Yie, G., 503, 504
Yoelin, S. D., 1007
Young, D. M., 1016
Young, F. S., 963
Young, N. O., 320
Youssef, M. I., 739

Zakin, J. L., 30
Zambeli, M., 392
Zamberlin, I., 395
Zaretsky, E. V., 537
Zaslavsky, Y. S., 541
Zerjavic, V., 490
Zerulli, H., 796
Zeschak, R. J., 1111
Zhorov, Yu. M., 581
Zick, L. P., 1041
Zimina, K. I., 387, 515
Zimmerman, C. W., 744
Zlotchenko, V. N., 388
Zupez, J., 138

ABSTRACTS SUBJECT INDEX

Numbers refer to Abstract Numbers

Achema 1967 exhibits, 356, 359
Additives:
  anti-corrosion, 910
  anti-wear, 911
  bearings, wire wool type, 212
  chemist's view, 909, 1138
  depolymerized rubber, 137
  development of versatile oils, 119
  dithiophosphoric acid diesters, 221
  engine oil:
    IC engines, 536
    taxis, 104
  identification and estimation, 674
  lubricants, 64, 100, 117, 541
  molybdenum disulphide, 120, 217, 227
  organolead compounds, 1135
  phosphorous, 1095
  rolling contact fatigue, 602
  rotors, influence on steel, 103, 104
  succinimides, detergent action, 1136
  TCP, 695
  tricresyl phosphate, 695
  wear reducing, 395
Adsorption, high pressure, 864
Africa:
  oil industry developments, 490
Agricultural chemicals, Shell, 326
Aircraft, supersonic fuels, 1132
Alabama:
  oilfield developments in 1967, 1008
Alaska:
  oilfield developments in 1967, 1029
Alberta:
  Athabasca tar sands, 24, 80, 255, 265, 346, 635, 637, 997
  Goose River field geology, 614
Algeria:
  Arzew petrochemical plant, 817
  gas, natural, characteristics, 891
  LNG plant problems, 1125
Alkylation:
  advances, 291
  monoalkylbenzenes, 184
  propylation, 1065
  toluene and benzene, 39
Aluminium drillpipe, 628
Ammonia:
  performance, plant, 234
  plant startup concept, large, 1045, 1071
Amoco opens Stevenage laboratory, 675
Analysis and testing:
  additive identification, 674
  alkylbenzenes, synthetic, 198
  analysers:
    continuous, 879, 880
    stream, 376, 1077
  aromatics, mass spectrometry, 389
  asphalt:
    glass transition, 591
    Marshall test, 796
  asphaltenes, isolation and properties, 516
  ball bearing test rig, torque, 122
  bitumen:
    Fraas breaking point, 470
    wax content, 1093
  bulk moduli, PVT data, 540
  Cl, P, S in gear oil, 195
  combustion oils, 304
  contact potential measurement, 519
  crude oil evaluation, 518
Analysis (*cont.*):
  diesel fuel operability, 385
  droplet size distribution, 1102
  engine fuel volatility, 900
  equilibrium measurement, 1090
  evaporators, 1050
  film thickness, thin, 1103
  filter efficiency, oil, 513
  four-ball wear tester, 1100
  fuel injection transducer, 327
  gas-pressure, transducers, 381
  gasoline:
    analysis by nuclear magnetic resonance, 887
    composition, group, 1098
    volatility, 469
  gauge, McLeod, condensable gases, 586
  gear testing, miniature circuit, 514
  grease flow pressure, 594
  hydrogen and carbonyl sulphides, traces, 81
  lubricants:
    evaluation:
      elastohydrodynamics, 1088
      periphery camera, 1101
    motor oil, cold cranking simulator, 697
    organic sulphur compounds, 693
    product behaviour, 889
    viscosity, compressibility, 471
  manometer, oil, 883
  methylene group, i.r. adsorption, 515
  microdensimeter, crystallography, 589
  mineral oils, X-ray, 895
  olefins, C_{11}–C_{16}, cracked wax, 1094
  n-paraffin in kerosine and gas oil, 388
  paraffins, chain length distribution, 673
  propylenetetramer, sulphur in, 1086
  spectrometer:
    e.s.r. sensitivity, 590
    MS9 modified, 888
    time-of-flight, ion molecule reactions, 592
  sulphur, rapid lamp method, 384
  turbine fuel, aviation, 24M6B in, 302
  ultra-violet absorption spectra, 201
  wax, i.r. spectroscopy, 671
Angola:
  offshore oil, 26
Apparatus 1968, new, 422
Arizona:
  Earp Formation, geology, 829
Arkansas:
  oilfield developments in 1967, 1021
  Upper Mississippian rocks, stratigraphy, 733
Aromatization, kerosine fractions, 49
Arylphosphinic acid ester synthesis, 1142
Asia, offshore oil search, 251
Asphalt:
  aromatic systems, 380
  road plant dust removal, 67
Athabasca tar sands, 24, 80, 255, 265, 346, 635, 637, 997
Australia:
  gas reserves, 162
  industry developments, 429
  legislation, offshore oil, 336
  offshore exploration, 576
  oil industry development, 638
Australia (*cont.*):
  students, encouraging oil, 546
Automatic control:
  blending, in-line gasoline, 312
  drilling, 260, 629
  gas production/distribution, Europe, 773
  industry usage, oil, 92
  i.r. process stream, 1075
  lease consolidation, 964
  oilfields, 161
  pipe cleaning, 854
  porosimeter, 190
  processing, chromatography, 1159
  rigs, drilling, 629
  tanker, gas, 654
  telemetering, alarm and data, 999

Ball bearing test rig, torque, 122
Barges, lay, 173
Bitumen:
  cation active emulsions, 912
  green slopes, use for, 709
  modifications and improvements, 66
  skid resistant, 810
  wax content, 1093
Blending:
  analysers, continuous, 880
  computer control, in-line, 659
  monitors, 378
Boilers:
  fuel oil characteristics and combustion, 60
  knowledge about, 1054
  pulsation, 691
  vapour pressure determination, 382
Brazil:
  oil exploration, 497
Brine, oilfield, scale deposition, 156
Bulgaria:
  oil industry development, 719
Burmah Oil Co., changed status, 544
Burners, survey of dual, 313

California:
  cementing steam injection wells, 742
  Huntingdon Beach, polymer and water flooding compared, 1002
  Monterey Canyon geology, 147
  oilfield developments in 1967, 1009
  water injection, 1007
Canada:
  Athabasca tar sands, 24, 80, 255, 265, 346, 635, 637, 997
  British Columbia Foothills, structure, 729
  eastern, geologic literature 1966–67, 494
  gas, conversion to natural, 1110
  oil and gas developments, 166, 167, 494, 498
  oilfield developments in 1967, 1011, 1015, 1027
  Quebec, Silurian system, 731
  western, seismic data, 149
Canvey Island LNG installation, 653, 658, 1040
Car ownership, British counties, 347
Carbon black:
  gasification, pressure, 713
  production, 406

Carolina:
oilfield developments in 1967, 1008, 1016
Catalysis:
activity algorithm, 375
*cyclo*hexane, methyl *cyclo*hexanols, 239
electronic transitions, 38
hydrogen-carbon monoxide interaction, 44
reforming C_8–C_{10} aliphatics, 189
Catalysts:
alumina, 187
alumina-silica, 379, 669
aluminium oxide, microspherical, 1158
alumino-silicate, mercaptans, 370
boron phosphate, 868
cadmium calcium phosphate, 917
chrome-silica, 37
chromium, 1072
cobalt, 875
faujasite, synthetic, 455
molten metals or alloys, 878
nickel, 36, 509, 666, 869
organo-metallic, 183
palladium-alumina, 40
palladium salt, 1153
platinum group, 44, 48, 50, 580
rhodium, 668
SnO_2 and Sb_2O_4, 1068
titanium trichloride-aluminium alkyl, 38
zeolites, 297, 1066
Ziegler-Natta, 870
Ceramics, oil firing, 692
Chemisorption:
benzene, 50
propane, 95
Chromatography:
crude oil evaluation, 518
Chromatography, gas:
columns, large, 1059
computer integration, 248; 890
hydrocarbons, C_1–C_5, 1084
mixtures, multi-component, 1092
process systems:
control, 1078, 1079, 1081, 1159
detection, 585
standard methods, 97
Chromatography, gas-liquid:
hydrocarbons, C_5–C_8, 196
quinoline, use of, 896
retention volume computation, 390
CIGRE Committee No. 1 progress, 231
Coal:
combustion in oxygen, 325
competition with oil for chemical feedstock, 485
hydrocarbons, useful, 1156
laser heating, 483
Coatings:
drillpipe, 256
epoxy resins, 410
rig protection, 715
Coke, petroleum, project, 243
Colombia:
Cenozoic deposits, 730
Colorado:
Cache field, algal reservoir, 613
depositional environment, determination, 617
Eocene shale, fatty acids, 552, 553
Palaeozoic, geologic development, 144
oilfield developments in 1967, 1028
Combustion:
fundamentals, 77
system design, 1113
Compressor accidents, 933
Computers, applications:
blending, octane, 593
British Petroleum order Solarton, 83
catalytic cracker, 1080
Computers (*cont.*):
chromatograph, gas, 890
compressors, 876
design of plant, 579
engineering uncertainties, 850
industry usage, general, 92
integration, gas chromatograph, 248
log data evaluation, 741, 757
Navier-Stokes equations, 1039
pipeline design, 431
process plant control, 794, 1078, 1081
pumping well performance, 989
refining plant performance, 579
thermal catalytic cracker, 873
vapour-liquid equilibrium, 1048
waterflood prediction, 86
Conductivity:
porous systems, thermal, 357
research, thermal, 465
Continental shelf relict sediments, 728
Corrosion:
boiler investigation, 690
ceramics in jet fuel, 484
coatings, rig protection, 715
columbium in steel, 407
distillation units, control, 140
epoxy resins, 410
furnace tubes, nitrogen, 413
heaters, hot water, 714
hydraulic oil, preventatives, 124
hydrogen plant, API survey, 1161
inhibitors:
assessment, 412
sulphonate, 414
pipelines, underground, 922
steel:
decarburizing, fissuring, 409
stainless, fuel oil ash, 1162
tank protection, internal, 73
turbochargers, marine, 902
water, cooling, 1163
Cracking:
n-butylbenzene, 580
computer control, 873
feed, influence on yield, 1061
heavy petroleum products, 669
n-hexane, 664, 665
nickel, reactions on, 869
n-octane pyrolyses, 364
platinum group, thermochemistry, 663
pyrolysis of hydrocarbons, 1060
unsaturateds, hydration, 868
Cracking, catalytic:
advances, 282, 284
heat effects, 508
moving bed, 281
Cracking, thermal:
hydrocarbon groups, conversion route, 182
Crankcase bearing temperature, 191
Critical path planning, 249
Crude oil:
evaluation, 518
hydrocarbons, C_1–C_5, determination, 1084
Khafi, hydrodesulphurization, 1105
oxidation in porous media, 968
photocolorimetry, 897
porphyrin, metal, complexes, 914
Romashkin, aliphatics, 1096
Sisak, 411
Syrian, evaluation, 1104
water emulsion stability, 996
Cutting fluid, mist application, 139
Czechoslovakia:
oil industry developments, 719

Dakota:
Spanish Pool, structure study, 619
subsidence structures, 620
Dearomatization, benzene, silica gel, 373
Defoliation and dessication, thermo, 1177
Dehydration, pentan-2-ol, 1072
Dehydrocyclization, α-amylnaphthalene, 379
Dehydrogenation:
n-butane with iodine, 1070
n-butenes to butadiene, 1068
ethylbenzene to styrene, 1069
Delaware, gas well stimulation, 976
Demand 1980, world oil, 1175
Desulphurization:
asphalts, residues, 294
distillates, 295
Deuterium exchange, *n*-hydrocarbons, 48
Dewaxing, microbiological, 417
Diesel engines
exhaust:
particulates, 99
problems, 310
fuel, low temperature operability, 385
lubrication of highly supercharged, 61
wear, cylinder, 59
Distillation:
batch, 278
bubble tray efficiency, 862
column temperature control, 362
curves, heavy distillates, 361
extractive, low temperature, 863
Drilling:
bits:
choice, 343
diamond, fluid dynamics, 424
microbits, 963
tooth, impact, single blow, 957
tooth, impact tests, 425
tooth penetration, 951
blowout control, 8, 751
casing:
cementing temperature, 952
protection, steam injection, 1006
cementing:
multi-stage, 840
wells, deep, 151
cements:
expanding, 743, 749
filler, 956
circulation temperature calculation, 961
coatings, drillpipe, 256
cost:
lower, 340
research, effect of, 990
cutting action, diamond, 745
cuttings, removal, 838
drillpipe:
aluminium, 628
intermediate weight, 259
emulsion fluid studies, 748
fluids:
pressure profile, 954
water base, properties, 946
geothermal gradient evaluation, 769
hardening, strain, porous limestone, 9
joint failure, bottom, 958
logging, magnetic tape, 770
acoustic, 744
computer application, 741
interpretation, 960
nuclear fracturing, 342
procedure optimization, 747
rig:
automatic progress, 629
workover, coiled tubing, 556
sands, electrical conductivity, 962
sandstone, salt cement damage, 940
shale:
density aids high pressure areas, 948
density, safety and speed, 150
fracturing, 955
sidetracking, 959

Drilling (*cont.*):
  speeds higher, costs lower, 630
  telemetering, telecontrol, 555
  wireline completion, 841
Drilling, offshore:
  blowout preventers, 258
  bumper subs, 837
  drill ship for 25,000 ft, 152
  flow line connection, 257
  hydraulic services, automatic, 260
  JOIDES project, 13
  Maersk Explorer drilling vessel, 12
  oceanographic data application, 7
  rigs:
    construction, 341
    jack-up cuts costs, 627
    western world survey, 631
  undersea and production, 947
Dunn, Laurence, tanker expert, 274

Earnings, survey of professional, 607
Economics, refining, 416
Education:
  engineering, 1173
  exploration, 545, 717
Egypt:
  Esna Shale stratigraphy, 253
  geologic structure pattern, 739
Electrical properties, light products, 517
Electricity supply, Fawley refinery, 1052
Electronic transitions, catalyst systems, 38
Emulsifying agents:
  oil on water, 63
  viscosity, 464
Endogas generation, 802
Energy:
  balance and nuclear power, 247
  market competition, 935
Engine fuels:
  additives for taxis, 104
  anti-knock compounds, 309
  butane and propane, 206
  detonation, 475, 476
  exhaust emission, 56
  knocking, cold flame combustion, 58
  settling, 57
  volatility, CRC evaluation, 900
Engineering, National Academy of, 822
Engineering student shortage, petroleum, 939
Engineers:
  managers expect, what, 820
  technology, growth of oil, 821
Engines:
  exhaust, positive crankcase ventilation, 698
  gasoline scavenging efficiency, 688
  Wankel rotary piston, 328
Esso research centre at Brussels, 823
Ethane pipeline, first, 694
Ethylene:
  dosimeter, gas phase, 93
  pipeline, ICI, 434
  supply and demand, 241, 457
Equipment and apparatus, new, 422
Europe:
  aromatics demand, 814
  gas, natural
    impact, 686
    production and distribution, automatic, 773
  refinery expansion, British Petroleum, 447
  pipeline growth, 442
  LNG, role of, 776
Evaporator testing, 1050
Exploration:
  forty miles below ground, 496
  profitability forecasting, 246
Explosion:
  electrical, mean time to, 1166
  flare systems, 929

Farmers, Shell scheme aids, 547
Feedwater treatment, 344
Fires:
  aircraft, fighting, 76
  British Petroleum's tug, 331
  inert gas generation, 305
  "light water" use, 330
Flame cultivator, oil fired, 944
Flammable liquid handling, 646
Flare systems:
  design and operation, 860
  explosions, 929
Flash point, significance of, 52
Florida:
  oilfield developments in 1967, 1008
Flow:
  flowmeter, gas, low rates, 377
  non-isothermal liquids, 1035, 1036
  reactor performance studies, 1053
  viscous, incompressible fluid, 1039
Fluid saturating, permeability by n.m.r., 20
Foam streaming and rheology, 489
Food crop, petroleum for world, 96, 1160
Four Corners-Intermountain area:
  oilfield developments in 1967, 1015
Fracturing, initiation and extension, 18
France:
  cracker, steam, Port Jérome, 458
  lubricant market, 708
  offshore drilling, 632
  petrochemical plant expansion, 772
Friction:
  heating, sliding contacts, 214
  steels, behaviour, 314
  surface asperities, 699, 700
  test methods compared, 672
  vibration effects, 194
Fuel cells:
  hydrazine-oxygen, 921
  progress, 940
Fuel oil:
  ash disposal, naval boilers, 1134
  desulphurization, 462, 463
  pipelines, heated, 431
Fuel policy, U.K. White Paper, 334
Fuels, supersonic aircraft, 1132
Furfural photometry, 718

Gas Council research, 687
Gas engines reviewed, 311
Gas enthalpies, K-values, 898
Gas, flue, wet scrubbing, 354
Gas, natural:
  appliance evaluation, 797
  characteristics, 521, 891
  conversion:
    boilers, solid fuel, 595
    industrial, 203, 803, 1107, 1126
  drying, glycol injection, 293
  flow:
    mass, convective diffusion, 1034
    measurement, orifice, 774
  heating, district, 307
  leak detection, 649, 650
  noise, installation, 306, 1131
  pattern in the 1980s, 1112
  price problem, 936
  production planning, optimum, 430
  sources, availability, markets, 1108
  usage:
    blast furnaces, 1128
    cement kilns, 1117
    considerations, general, 1120
    electricity generation, 522, 1115
    glass industry, 1119, 1121
Gas, natural (*cont.*)
    hardening, flame, 801
    phosphorous production, 473
    steam generation, 1111
    steel heating, 308
    turbines, 55
Gas, refinery, solids removal, 358
Gas, town, detoxified, health hazards, 809
Gas, waste, "dry" purification, 78
"Gasbuggy" project, 345, 966
Gasoline:
  blending, automatic in-line, 312
  composition, group, 1098
  octane control, road tests, 903
  unleaded, economics, 901
Gear oil:
  heavy duty, stability, 223
  thermal oxidation and stability, 125
Gears:
  heat transfer coefficient, 224
  lubricant testing machine, miniature, 514
  lubrication, 128, 208
Genesis, petroleum:
  carbon isotopes, 418
  molecular criteria, 82
  palaeolatitude, 55
  wax oils, significance of, 920
Geochemistry and hydrocarbon origin, 82
Geodesy at Cambridge University, 835
Geologist and geophysicist, relationship, 148
Geologist's heritage and future, 143, 254
Geology:
  basinal subsidence faulting, 737
  boron as paleosalinity indicator, 834
  caprock evaluation, 738
  compaction, differential, 723
  drainage analysis, 145
  exploration, future of, 727
  fracturing and energy balance, 554
  hardness reducers, rock, 11
  "Nubian Sandstone", meaning of, 735
  rare event, significance of the, 146
  reservoir fluid migration, 827
  sand bodies, stratigraphy models, 832
  sandstone body, synthetic vertical profile, 5
  Silurian reef, carbonate study, 338
  subsidence and supersubsidence, 2
Geophysics:
  island arc system, 6
  line-charge system, ICI, 423
  neutron generator applications, 339
  seismic reflection studies, 740
Georgia:
  Atlantic Coast Plain stratigraphy, 830
  oilfield developments in 1967, 1008
Germany:
  gas, natural, conversion, 800
  petrochemical plant developments, 71, 816
Graphite vapour lubrication, 228
Grease:
  acidity and basicity, effect, 211
  aerospace application, 107
  automotive, 1145
  blending and compounding, 191, 1139
  boron nitride thickener, 108
  bulk handling, 209
  calcium hydroxystearate, 215
  dropping point method, ASTM report, 123
  electrical and rheological properties, 1137
  electron microscopy, 532
  equipment, new processing, 1143
  extreme temperature, 229
  flow:
    centralized systems, 1140
    pressure determination, 594

Grease (*cont.*):
frictional resistance, 216
injector lasts 10,000 hours, 126
lithium stearate, 121
processing, new Stratco Contactor, 601
rolling bearing vibration, 530
specifications, future, 1144
synthetic, 102
Grinding fluid filtration, 807
Gulf Coast:
back pressure test curves, 845
geology, fracture patterns, 725

Hanover Fair 1968, materials and equipment, 1055
Health hazards, lubricants, 141
Heat:
exchanger:
data correlation, heat transfer, 1047
leaks, freedom from, 1047
losses, tanker cargoes, 1037
transfer bibliography, 507, 855
Helicopters cut tanker delays, 1044
Helium storage, 778
Honduras:
Mesozoic stratigraphy, 4
Hovercraft, oil industry use, 487
Hydraulic oil:
mahogany sulphonates, corrosion, 124
thermal stability, 219
turbine use, 696
Hydrocarbons:
acetic acid from *n*-butene, 237
acetylene hydration, 917
alcohols:
dehydration, 187
route, a new, 1155
aliphatics, C_6–C_{10}, reforming, 189
n-alkanes, odd/even alternation, 1082
alkylbenzene dehydration, 1069
alkylphenols, absorption spectra, 387
aromatic compound production, 712
aromatic systems, 380
aromatics:
Arolsolvan process, 280
European demand, 814
high purity, 279
Udex extraction, 372
U.K. sources, 818
zeolite catalysts, 1066
asphaltenes, 516
benzene, cheap pure, 813
butadiene, 397, 1067
butan-1-ol ketonization, 403
n-butane, reaction with iodine, 1070
butane-propane oxidation, 238
butene isomerization, 368
composition by extractive distillation, 1085
*cyclo*hexane, HA-84 process, 874
*cyclo*hexane, methyl*cyclo*hexane, dechlorination, 235
*cyclo*pentadiene, 230, 397
*cyclo*pentane, vibrational spectrum, 53
ethylene:
decomposition, 875
oxidation, 811
plant concept, large, 1045
vinyl acetate production, 1152, 1154
H-abstraction by OH, 298
heptadiene synthesis, 232
*iso*paraffins by isomerization, 542
*iso*prene:
from acetone/acetylene, 236
recovery, 322
methane:
catalytic decomposition, 188
diffusion flames, 1114
low pressure routes, 812

Hydrocarbons (*cont.*):
oxidation, 461, 466
radiolysis, 588
methylbutene condensation, 1153
mixtures:
binary, enthalpies, 894
simple, properties, 893, 967
monoalkylbenzenes, alkylation, 184
neo-acids and alcohols, 393
n-octane pyrolysis, 364
α-olefin metallation, 1151
olefins:
cracking, 1094
isomerization, 187
substituted, hydrogenation, 183
oxidation, controlled, 1149
n-paraffin in kerosine/gas oil, 388
n-paraffins, Parex process, 46
paraffins:
dearomatization, 866
oxidation, 404
refining with DMF, 867
solubility, 865
paraxylene purification, IFP process, 324
pentan-2-ol dehydration, 1072
polyethylene glycol, 390
propane-propylene, molecular sieve adsorption, 510
propylene:
alkylation, 1065
disproportionation, kinetics, 603
production and use, 710, 711
re-boiled, absorber, 1048
pyrolysis, steam/ammonia, 1060
separation, membrane, 296
toluene:
catalytic oxidation, 878
condensation, 240
unsaturateds, cracking, 869
o-xylene chlorination, 543
xylene isomerization, 1083
viscosity correlation with pressure, temperature and composition, 953
Hydrocracking:
advances, 283
triterpanes, structure, 884
water phase interaction, 885
Hydrodesulphurization kinetics, 42
Hydroformylation, benzene, 314
Hydrogen:
liquid, production, 583
recovery route, new, 1073
Hydrogenation:
benzene, 314
olefins on alumina, 365
olefins, substituted, 183
saturateds on nickel catalysts, 36, 666
wax, 1063
Hydrogenolysis, ethane, 285
Hydroisomerization, *n*-butenes, 668
Hydrorefining:
IFP process, 1062
wax production, 398
Hydrotreating:
catalytic cracking feedstocks, 286
distillates, high sulphur, 289, 295
lubricating oil, 287
thermal cracking by-products, 290
wax, 287
Hungary, oil industry developments, 719

Idaho:
Samaria Mountain palaeozoic stratigraphy, 824__
IFP process, paraxylene purification, 324
Illinois:
depositional environment, 3
gas storage, aquifer, 1033

Illinois (*cont.*):
Loudon field telemetering, 999
oilfield developments in 1967, 1020
India:
fertilizer plant policy, 485, 815
Indiana:
oilfield developments in 1967, 1020
Insulating oil:
ageing, ionization, 193
gassing, 916
Instrumentation, fuel quality, 376
Interfacial tension, benzene-*n*-decane-water, 94
Investment in process industries, future, 142
Iowa:
Forest City basin geology, 720
IP-ASTM standardization, 468
Irish Sea:
sedimentary basin geology, 825
Isomerization:
advances, 292
aliphatics, C_6–C_{10}, 189
British Petroleum process, light hydrocarbons, 41
butene, 368, 871
*cyclo*hexane, active centres, 40
n-hexane, 664, 665
Isom process, 459
olefins, cracked, 197
paraffins, low melting point, 542
xylene, 367, 1083
Israel:
Eilat-Mediterranean pipeline, 782
Italy:
petrochemical complex, Soc. Italiana Resine, 819
refinery development, 179

Japan:
gasoline octane numbers, 1133
LPG supplies, foreign, 474, 501, 641, 642
refinery expansion, 451
town gas from naphtha, 456
Jet fuel property measurement, 1091
Jet transport, fuelling, 270
JOIDES offshore drilling project, 13

Kansas:
Forest City basin geology, 720
Kathometer sensitivity, thermistor, 1089
Kentucky:
oilfield developments in 1967, 1020
Ketonization, butan-1-ol, 403

Laminar-turbulent transition, 79
Libya:
Oxylibya field on stream, 639
Liquefiable gas, bulk storage, 271
Liquefied natural gas:
Canvey Island installation, 444, 652, 653, 658, 1040
demand, future potential, 648
European energy, role in, 776
Jules Verne, three years' experience, 645
pipeline transportation, 643
usage:
heaters, water, 1129
motor fuel, 905, 1124
utilities, 685, 1127
viability, medium term schemes, 1123
Liquefied petroleum gas:
production from naphtha, 899
slug for oil recovery, 22
tanker developments, 654
U.K. uses, 605
usage:
agricultural, 205
factory, 520

Louisiana:
  Hackberry wedge geology, 734
  oilfield developments in 1967, 1021, 1024
  sand consolidation experience, 750
  Smackover Limestone petrology, 610
Lubricants:
  additives:
    anti-corrosion, 910
    chemist's view, 909
    crankcase, 100
    effects, 64, 100, 103, 104, 117, 137
    identification and estimation, 674
    organolead, 1135
    rolling contact fatigue, 602
    taxis, 104
    versatile oils, 119
    wear reduction, 395
  bearings:
    ball, 529, 537
    quiet, U.S. Navy, 101, 210
    railway cars, 138
  blending and compounding, 192
  borates, extreme pressure films, 220
  composite materials, self-lubricants, 118
  contacts, electric current flow, 598
  cutting oils, 527
  detergent oils, IC engines, 908
  die bulge forming, 600
  diesel engines, marine, 61, 702
  earth moving equipment, 114, 115
  engine oil:
    diesel dispersant, 907
    marine, filtration, 804
    specifications, 799
    used, clarification, 805
    viscosity, low temperature, 1099
  engines:
    internal combustion, 109
    new, novel systems, 1165
  evaluation:
    camera, periphery, 1101
    elastohydrodynamics, 1088
  extrusion, hot, 705
  flash point, 213
  gear, 128, 208
  graphite vapour, 228
  handling and storing, 1141, 1147
  health hazard, industrial, 14
  horological, 136
  hydraulic:
    mechanisms, 113
    oils, 533
  lead, metallic, 538
  locos, diesel hydraulic, 130
  machine tools, heat treatment, 528
  machinery, three-year test, 133
  metalworking, 131, 534
  molybdenum disulphide, 120
  motor oils:
    advances, 315
    engines, 1968, 62
    multi-grade, 526
  nuclear power plant, 111
  organolead compounds, 106
  quality trends, 318
  refrigerators, 112, 396
  requirements, future, 65
  rocket motor, 316
  rolling, cold, 222
  solid:
    film thickness, 226
    polyimide-bonded, 105
    technology, 525
  steels, continuous casting, 319
  textiles, 535
  transformer and switch oils, 116
  weapons, 524
  wire rope, 321
Lubrication:
  ageing relation to base oil, 317
  bath, oil, AEC Circon system, 539
  boundary, TCP additive, 695
  capillary, 320
  cracks, role in contact fatigue, 599
  elastohydrodynamic parameters, 694
  films, electrodeposited, 135
  friction, test methods compared, 672
  silicone, substituted, thin film, 394
  steels, frictional behaviour, 314
  stick-slip phenomena, 531
  temperature, high, 808

Marketing:
  seasonal demand variation, 332
  U.K. fuel demand trends, 334
Maryland:
  oilfield developments in 1967, 1016
Metals:
  films, stripping thin oxide, 512
  surface roughness, 199
Metering, gas and liquid, 511
Meters, high pressure gas, 795
Mexico:
  geology, petroleum evaluation, 736
  oilfield developments in 1967, 1027
Michigan:
  oilfield developments in 1967, 1010
Mid-Continent:
  gravity high structures, 826
  oilfield developments in 1967, 1023
Middle East:
  oil developments, hostility effects, 25
Mississippi:
  oilfield developments in 1967, 1008
Missouri:
  Forest City basin geology, 720
Molecular sieves:
  Isosiv plant, 460
  propane-propylene adsorption, 510
Montana:
  Niske Formation, trap mechanics, 624
  oilfield developments in 1967, 1022
  subsidence structures, 620
Motel, Esso opens second U.K., 608

Navy fuel and lubricant programme, 597
Nebraska:
  Forest City basin geology, 720
  oilfield developments in 1967, 1028
Netherlands
  gas, natural:
    combustion characteristics, 891
    developments, 204, 781, 1116
    pipeline grid, 781, 783
    refinery developments, 177
    Schoonebeek field, steam drive, 1003
New England:
  oilfield developments in 1967, 1013
New Jersey:
  oilfield developments in 1967, 1013
New Mexico:
  Lusk Strawn field, geology, 626
  oilfield developments in 1967, 1014, 1019
New York:
  oilfield developments in 1967, 1013
North Sea, British:
  barge *Hugh Gordon*, 438
  drilling technology, 950
  gas, natural, characteristics, 891
  gas/oil search, 80, 438, 636
  sea city off Norfolk, 499
Nuclear energy:
  chimney in oil shale, 941
  fracture permeability, 756
  role in total energy balance, 247

Octane rating:
  distribution number method, 202
  motor from research, calculation, 303
Offshore gas and oil fields:
  Angola, 26
  Australia, 576
  North Sea, 80, 438, 636, 891
Ohio:
  oilfield developments in 1967, 1016
Oilfield expansion:
  Idris, Libya, 443
  Middle East, 25
  Oman, 266
  Zakum, 852
Oklahoma:
  geology, field development, 615
  oilfield developments in 1967, 1026
  shale clue to buried reefs, 724
Oregon:
  Cretaceous stratigraphy, palaeo-environments, 626
  oilfield developments in 1967, 1009

Paraffin wax:
  2nd International Colloquium on Paraffins and Waxes, Leipzig, December 1966, papers, 70
Parex process, *n*-paraffins, 46
Pavement, dynamic testing, 419
Pennsylvania:
  flow improvement, explosives, 975
  Mauch Chunk sandstone, geology, 726
  oilfield developments in 1967, 1016
  steam flooding appraisal, 974
Permeability measurement, n.m.r., 20
Petrochemical industry:
  attapulgite and bauxite, use of, 372
  caprolactum, SNTA process, 877
  economic aspects, 937
  explosion hazards, 415
  growth, world survey, 233
  marketing and investment, 1172
  plant design trends, 1049
  SCI 1968 annual meeting, papers, 918
  sources, 1159
  trends, future, 405
Petrochemical plant developments:
  Algeria, 817
  Burghausen (Marathon Oil), 242, 816
  Germany, 72
  Milford Haven (Gulf), 929
  Sardinia (Soc. Italiana Resine), 819
"Petroleum Measurement Manual", revision, 435
Phenol plant, Grangemouth, 661
Phenoxy radical chemistry, 47
Phillips' new Brussels laboratory, 945
Photo-polymerization, vinyl monomers, 667
Pipe:
  cleaning, remote control, 854
  flow:
    calibration, 1076
    effect of diameter, vibration, viscosity, 301
    plastic:
      economics, testing, 504
      properties, 503
    polymer solutions, 30
    scale-up correlation, complex fluids, 10
    sealing materials, gas, 28
    slurries, plastic, 437
    thixotropic liquid, 440
Pipelaying:
  BP barge *Hugh Gordon*, 438
  without trenches, 657
Pipelines, land:
  Bavaria-Frankfurt, 204

Pipelines (*cont.*):
construction, world review, 174, 445, 779
corrosion, underground, 922
Eilat-Mediterranean, 782
ethane, first, 644
European growth, 442
fuel oil, heated, 431
Iran–U.S.S.R., 780
Netherlands gas grid, 781, 783
Rhine River crossings, 439
Stanlow-Heysham, 275
testing, 168
Trans-Alpine, 80, 442, 651
Trans-Iranian, 32
turbine uses, gas, 777
U.K. Gas Council grid, 1043
welding:
electron beam, 1042
techniques, 436
Wilton-Runcorn, ICI ethylene, 434
Pipelines, offshore:
Africa, 173
Europe, 173
Leeman Bank-Bacton, Shell/Esso, 170, 500
Middle East, 173
Piping components:
centrifugally cast, 857, 858, 859
fire testing, 925
Piping plant, economics, codes, standards, 938
Piping systems, hydrogen service, 856
Plastics:
filling station, BP, 656
German conference, Munich, April 1967, 244
Poland:
oil industry developments, 606, 719
Pollution, atmospheric:
boilers, domestic, 252
sulphur, less, 371
vehicle emission, literature 1955–67, 904
wild life, cost to, 548
Pollution, marine, measures, 775
Polymer grafting, 401
Polymerization:
ethylene, 37
kinetics of reactions, 1064
olefins, 38
Ziegler-Natta catalysts, 870
Pressure tester, ASTM extreme, 200
Production of gas:
bottomhole pressure calculation, 753
control in Europe, automatic, 773
flow:
porous media, 768
theory, 752
fracture flow area, effective, 986
inflow performance relation, 1004
jet ejector application, 759
reservoir studies, 980
saturation change measurement, 573, 574
water contact estimation, 758
Production of oil:
automation, 161
burners, downhole, 88
casing, cement bond damage, 633
combustion:
in situ, 565, 568
reverse, 558
steam stimulation, 84
commingling operation measurement, 846
condensate recovery, 571
core, oil content measurement, 849
data, well, information retrieval, 1025
dispersion coefficient examination, 979
Production of oil (*cont.*):
displacement theory, Buckley-Leverett, 995
elasticity equation, porous media, 569, 570
explosives, deep well, 847
fault, well distance from, 262
flooding, wettability alteration, 844
flow:
capacity, steady state, 567
immiscible liquids, 987
multi-phase, 755
pattern prediction, 843
polymer solution, 973
reservoir prediction, 994
three-dimensional, 427
formation:
cleaning, 634
factor measurement, 562
fracturing:
initiation and extension, 18
propping agents, 261
squeeze treatment, 1000
imbibition model, mathematical, 157
injection, water, pressure change, 154
logging:
parameter measurement, 1005
problems, 981
LPG slug, oil recovery, 22
neutron lifetime log, 765
parameters, reservoir, 47, 426
perforation, effect of, 746
performance:
surface, specific, 993
tracer prediction, 754
waterflood, 86, 762
permeability:
function, 983
measurement, 20, 566
sand, fluid flow, 572
plugging thief zones, 992
polymer in flood water, use of, 564
porous media, properties, correlation, 14
potential, simulation, 264
pressure:
analysis, unsteady state, 766
buildup tests, curves, 761, 991
drawdown and buildup, 15
drop, two-phase, 848
maintenance, 972
pulses, velocity, 428
reservoirs, rectangular, 977
threshold, 982
transient, water injection, 16
waterflood, 767
productivity, graphical presentation, 763
profile techniques, 760
propping agent transport, 764
pulse testing application, 984
pumping:
rod, 158
well performance, 989
recovery:
Tertiary oil, sandstone, 19
viscous oil, 560
water drive calculation, 153
reservoir:
rock wettability, 1001
problems, two-dimensional, 969
properties, physical changes, 965
sand:
problems, 89
shaly, water saturation, 988
segregation, transient counterflow, 575
slug injection:
alcohol/kerosine, 19
LNG, 22
steam drive:
evaluation, 155, 771
operations, 561
Production of oil (*cont.*):
sweepout, 7- and 9-spot patterns, 21
waterflooding:
hot, 559
material balance analysis, 160
Stiles method, modified, 998
thermal recovery, 159
Production, offshore:
drilling technology, 950
pumping, hydraulic, 971
riser, deepwater, design, 640
Profilometry, re-location, 1146
Propellants, hydrocarbon, 1118
Property evaluation, oil, 934
Protein from petroleum, 96, 1160

Refineries, new and improved:
Amsterdam (Mobil), 1169
Antwerp (Signal), 789
Castellón (Esso), 449
Ellesmere (Burmah Oil), 176
Gothenburg (British Petroleum), 91, 178
Grangemouth (British Petroleum), 66, 788
Harwich (Carless), 861
Killingholme (Lindsey Oil), 1056, 1058
Lebanon (Iraq Petroleum), 790
Marathon Oil, 242
Milford Haven (Gulf), 929
Petrocokes Ltd, 243
Pulau Bukon (Shell), 454
Shell Haven, 453
Sisak (Yugoslavia), 349, 352, 353, 355
Sola (Norsk Shell), 360
Spanish Government, 791
Taranto (Shell Italiana), 277
Tehran (NIOC), 1057
Tobango (Shell), 787
VEB Erdoel Schwedt, 351
Refinery construction, world, 452
Refinery equipment, centrifugally-cast products, 175
Refinery plant design, computer-aided, 579
Refining:
Adex aromatic extraction, 372
AEI mini-syncro controls, 587
aluminium oxide reactivation, 872
analysers, continuous, 879, 880
Arosolvan process, 280
cleaning plant, use of explosives, 785
distillation, rectification, sorption, extraction, literature 1966–67, 662
economics, present and future, 416
effluent treatment, 33
energy consumption assessment, 786
gas, solids removal, 358
HA84 process, *cyclo*hexane, 874
heat transfer, dropwise condensation, 450
heating products, economic, 448
hydrocracking *n*-paraffins, 581
hydrogen processing, lubricant stocks, 43
hydrogenation, wax/ceresin, 186
Isomax, RCD, installation, 1074
Isosiv molecular sieve, 460
leak detection, 1046
management information, 881, 882
NPRA discussion, 582
plant concept, large, 1045
process integration, optimization, 34
product heating, economic, 448
pyrolysis, gasoline, 181
reactors, recirculating, 350
rectifying calculation, 180
safety measures, 245
stabilizing middle distillates, 596
Uhde gas sweetening, 793

Refining (*cont.*):
waste minimizing, 276
Resins, paraffinic, treatment, 670
Road surface, *Shellgrip*, 913
Rumania, oil industry development, 719
Rust prevention, chain-length compatibility in, 74

Safety measures:
barrier method, 75
chemical process industry, 604
ethylene oxide, 1168
fires, fighting aircraft, 76
hazards, evaluation, 329
loading fuel, 926, 1170
petrochemicals, explosions, 415
petroleum industry, 927, 928, 932
rail truck loading, 926
refining plant, 245
tanks, storage, 29
Scale deposition:
barium sulphate, 851
brines, oilfield, 156
"Seal compatibility index" proposed, 391
Seals, high temperature, elastomer choice, 1176
Sewage plant, Erdoelchemie, 660
Social sciences and industry, 335
Soil reclamation, oil contaminated, 943
Solvent recovery, 35
Spain, refinery expansion, 791
Spectrometers, mass:
aromatics analysis, 389
cold cathode quadrople, 51
tips, wires or edges?, 383
Spectrum, vibrational, *cyclo*propene, 53
Stabilized systems, barrier to coalescence, 299
Steam generators, natural gas, 1111, 1122
Storage tanks:
air cushion, 444
corrosion, internal, 73
design:
600,000-barrel, 1032
approach, a new, 1041
British view, 1030
dipping procedure, 647
LPG, bulk, 271
underground:
economic aspects, 27
gas, 172
underwater, 853
Styrene production, 45
Sulphonation, cracked oil, 402

Tank wagons, rail and road, safety, 90, 268, 926
Tank washing machine, Dasic, 577
Tanker charters 1965–67, 716
Tanker heat losses from cargoes, 1037
Tankers:
Adm. Wm. M. Callaghan, 207
Dolabella, 80
helicopter cuts delays, 1044
Humboldt, for LPG, 654
Idemitsu, 169
Mobil Oil's fleet, 1038
Regent Westminster, 272
Shell supertankers, 31
Wiltshire, 578
Telomerization, butadiene, 1067
Tennessee:
oilfield developments in 1967, 1020
Terminals, marine loading:
Hong Kong (Mobil/Gulf), 505
Terminals (*cont.*):
Iranian Oil Operating Co., 273
Kuwait Oil Co., 171, 506
Persian Gulf, 632
Taranto, 277
Thames, 348
Texas:
crude oil, optically active fraction, 472
Lower Cretaceous geology, 833
oilfield developments in 1967, 1012, 1017, 1018, 1019, 1021, 1026
Palo Pinto limestone production, 612
Thermal analysis, high temperature differential, 54
Thermodynamics:
gas research, NGPA, 898
liquid surface, 467
Titration, thermometric, 584
Torrey Canyon disaster:
pollution handling, 433
what industry learned, 432
Transformer oil:
fibres/gases, effect of, 69
high voltage stress studies, 68
resistivity, 1148
Transmission fluids, past and future, 806
Trays, cap-grid, 446
Tribology:
metallurgist's contribution, 129
physicist's contribution, 134
Turbine generators, dual fuel system, 1164
Turbine oil ageing, 798
Turbines, gas:
electric power use, 923
usages, 777

Uhde gas sweetening, 793
United Kingdom:
aromatics, sources, 818
Canvey Island installation, 653, 658, 1040
car ownership, British counties, 347
conversion from town gas, 549, 1107
fuel policy, Government White Paper, 334
LNG transport from Algeria, 652
LPG uses, 605
motor vehicles and fuel consumption, future, 1178
North Sea exploration, 80, 438, 636
onshore exploration, 836
pipeline grid, Gas Council LNG, 1043
Yorkshire engineering exhibition, 609
United States:
Appalachian reservoir investigation, 85, 263
coal and shale, energy picture, 1157
continental interior geology, 828
crude oil supply and demand, 165
exploration, advancement, oil, 164
gas, natural:
energy picture, 676
supplies analysed, 1109
Hibberd Pool water/gas flood, 557
industry statistics 1967, 42
Late Mississippian stratigraphy, 831
Mid-Continent recovery techniques, 563
north-west ocean ridge geology, 1
oilfield developments in 1967, 1027
oilfields, economic life of, 772
overseas business, oil, 333
Payas reservoir performance, 970
Spraberry flood project, 978
Texas crude, optically active fraction, 472
United States (*cont.*):
Wilmington coast oilfield development, 163
U.S.S.R.:
dewaxing plants, 363
gas deals, bids for European markets, 784
wax from Soviet crudes, 399
Utah:
Samaria Mountain Palaeozoic stratigraphy, 824

Vehicle diagnosis, 924
Venezuela, steam from brackish water, 985
Vinyl chloride, polarographic study, 300
Virginia:
oilfield developments in 1967, 1016
Viscometer:
high pressure, 98
turbine, air, 1087
Viscosity:
crankcase oil, loss prediction, 703
low temperature, high pressure, 892
measurement, cold cranking simulator, 697, 707
ternery blends, base stocks, 218

Washington:
oilfield developments in 1967, 1009
Waste, deep hole takes industrial, 550
Water:
bath, temperature controlled, 386
cooling, inhibitor guide, 408
oilfield, origin determination, 942
refinery waste treatment, 420
surface and subsurface, treating, 842
thermosludge treatment, 839
Waterways, U.K. oil transport, 267
Wax:
hydrocarbon composition, 915
hydrogenation, 186, 1063
hydrorefining, 398
recovery, 185
spectroscopy, infra-red, 671
Wear:
diesels, high sulphur fuel, 701
four-ball tester, 1100
machining-type, 532
measurement, 132
prevention by dispersed solids, 706
reduction by additives, 395
Weeding, flame, 906
Welding:
carbon dioxide, 1031
electron beam, 502, 655, 1042
pipeline techniques, 436
White oil emulsion, ageing changes, 886
White Paper on U.K. fuel policy, 334
World oil demand 1980, 1175
Wyoming:
Cottonwood Creek geology, 616
geology, oil accumulation, 622
oilfield developments in 1967, 1022
Palaeozoic reservoirs, 623
Pitchfork oilfield, 611
secondary recovery, 616

Yugoslavia:
oil industry developments in 1967, 488
Sisak refinery, 349, 352, 353, 355

Zeolites:
heat of immersion, 1097
synthetic, 184

BOOKS REVIEWED

Numbers refer to pages

Atomic Absorption Spectrometry in Geology, E. E. Angino and G. K. Billings, 38A

Diapirism and Diapers, J., Braunstein and G. D. O'Brien, *Editors*, 178A

Drilling Techniques, Novel, C. Maurer, 87A

Energy in Europe, 1945–1980, W. G. Jensen, 65A

Energy in North-west India, Demand for, P. N. Dnar and D. U. Sastry, 80A

Gas Lift Theory and Practice—including a review of Petroleum Engineering Fundamentals, Kermit E. Brown, 77A

Highways, C. A. O'Flaherty, 52A

Instrumentation in the Chemical and Petrochemical Industries: Vol. 3, Instrument Society of America, John T. Ward, *Editor*, 39A

Middle East, Oil in the: its Discovery and Development, Stephen Hemsley Longrigg, 64A

Molecular Spectroscopy, A New Chemical Structure Code for Data Storage and Retrieval in, L. C. Thomas, 129A

Oil—The Biggest Business, Christopher Tugendhat, 88A

Salt Domes—Gulf Region United States and Mexico, Michel T. Halbouty, 37A

Sedimentology, Developments in, Vol. 8: Diagenesis in Sediments, G. Larsen and G. V. Chilingar, *Editors*, 78A

Sedimentology, Developments in, Vol. 9A: Carbonate Rocks—Occurrence and Classification, G. V. Chilingar, H. J. Bissell and R. W. Fairbridge, *Editors*, 38A

Sedimentology, Developments in, Vol. 9B: Carbonate Rocks—Physical and Chemical Aspects, H. J. Bissell and R. W. Fairbridge, *Editors*, 77A

Sedimentation, Developments in, Vol. 10: Cyclic Sedimentation, P. McL. D. Duff, A. Hallam and E. K. Walton, 39A

Stratigraphy of the British Isles, The, Dorothy H. Rayner, 12A

"Torrey Canyon" *Pollution and Marine Life*, Plymouth Laboratory, J. E. Smith, *Editor*, 88A

Transporting Oil To and Within Europe, Economics of, Michel Hubbard, 52A

Vapour-Liquid Equilibrium, E. Hala, J. Pick, V. Fried and O. Vilim, 147A

Wear Considerations in Design, Charles Lipson, 12A

White Mineral Oil and Petrolatum, E. Meyer, 87A

BOOKS RECEIVED

Geophysics, Exploration, Mikhail K. Polshkov, *Editor*, 179A

Lubrication, Fundamentals of, E. G. Ellis, 80A

Migmatites and the Origin of Granitic Rocks, K. R. Mehnert, 179A

Molecular Sieves, Society of Chemical Industry, 179A

Motor Oils and Engine Lubrication, A. Schilling, 2nd edn, 179A

Sedimentation, Recent, in Northern Cardigan Bay, Wales, J. Robert Moore, 80A

Thermodynamiques Générale et Applications, R. King, 52A

PRINTED BY ADLARD AND SON LIMITED, BARTHOLOMEW PRESS, DORKING, SURREY